

WHAT IS CLAIMED IS:

1. An IC comprising;

an internal circuit;

5 a debug I/F circuit for debugging the internal circuit from externally; and

an authentication circuit which is provided between the debug I/F circuit and a debug terminal for connecting outside, and for transmitting a transmission key from the debug terminal to outside, and authenticating from a signal received from the debug terminal and said transmission key to enable operation of the debug I/F circuit.

2. The IC according to claim 1, wherein the authentication circuit cancels a reset signal to the debug I/F circuit for enabling the operation.

3. The IC according to claim 1, wherein the authentication circuit generates an authentication key that is encrypted the transmission key by a predetermined key, and collates said reception signal with the authentication key.

4. The IC according to claim 1, wherein the authentication circuit time-waits the operation enabling.

5. The IC according to claim 1, wherein the authentication circuit generates the transmission key by random numbers.

6. An electronic device mounted with an IC, said IC comprising;

an internal circuit;

5 a debug I/F circuit for debugging the internal circuit from externally; and

an authentication circuit which is provided between the debug I/F circuit and a debug terminal for connecting outside, and for transmitting a transmission key from the debug terminal to outside, and collating the signal received from the debug terminal with the transmission key to enable operation of the debug I/F circuit.

7. The electronic device according to claim 6, wherein the authentication circuit cancels the reset signal to the debug I/F circuit for enabling the operation.

8. The electronic device according to claim 6, wherein the authentication circuit generates the authentication key that is encrypted the transmission key by a predetermined key, and collates the reception signal with the authentication key.

9. The electronic device according to claim 6, wherein the authentication circuit time-awaits the operation enabling.

10. The electronic device according to claim 6, wherein the authentication circuit forms the transmission key by the random

numbers.

11. A debugging method for utilizing a debug I/F circuit  
and debugging an internal circuit from externally, comprising  
5 the steps of:

transmitting a transmission key to externally when the  
debug I/F circuit is activated; and

authenticating the signal received from externally and  
the transmission key to enable operation of the debug I/F  
10 circuit.

12. The debugging method according to claim 11, wherein the  
authentication step includes a step of canceling a reset signal  
to the debug I/F circuit for enabling the operation.

13. The debugging method according to claim 11, wherein the  
authentication step includes;

a step of generating a authentication key that is  
encrypted the transmission key by a predetermined key, and

a step of collating the received signal with the  
authentication key.

14. The debugging method according to claim 11, wherein the  
authentication step has a step of time-awaiting the operation  
25 enabling.

15. The debugging method according to claim 11, wherein the

transmission step has a step of forming the transmission key  
by the random numbers.

16. The debugging method according to claim 11, wherein  
5 further comprising;

a step of receiving the transmission key and encoding  
by a predetermined key, and transmitting the received signal  
with a discrimination device provided between a debugger and  
the debug I/F circuit.

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17. A debugger for debugging an IC, the IC comprising an  
internal circuit; a debug I/F circuit for debugging the internal  
circuit; and an authentication circuit which is provided  
between the debug I/F circuit and the debug terminal, said  
15 debugger comprising;

a debug unit for debugging said LSI; and

a discrimination device which is provided between said  
debug unit and said debug I/F circuit, and for receiving a  
transmission key from said authentication circuit, encrypting  
20 said transmission key by a predetermined key, and transmitting  
the encrypted key to said authentication circuit to enable  
debugging of said IC by said debug unit.